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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/561,446	03/20/2007	Laurent Philippe	282369US6XPCT	8212
22850	7590	12/30/2009	EXAMINER	
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P. 1940 DUKE STREET ALEXANDRIA, VA 22314			NGUYEN, TU MINH	
			ART UNIT	PAPER NUMBER
			3748	
			NOTIFICATION DATE	DELIVERY MODE
			12/30/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/561,446	Applicant(s) PHILIPPE ET AL.	
	Examiner TU M. NGUYEN	Art Unit 3748	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 September 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7-15 and 18-26 is/are pending in the application.
- 4a) Of the above claim(s) 18-26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. An Applicant's Request for Continued Examination (RCE) filed on January 21, 2009 has been entered. Per instruction from the RCE, an Applicant's Amendment filed on July 24, 2008 has been entered. Claims 16-17 have been canceled; claims 7-14 have been amended; and claims 18-26 have been added. Overall, claims 7-15 and 18-26 are pending in this application.

Election/Restriction

2. Applicant's election without traverse of the species of Figure 4 in an Applicant's Response to an Election/Restriction Requirement submitted on September 8, 2009 is acknowledged. Claims 7-15 are readable thereon and will be examined in their full merit. Claims 18-26 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office Action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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4. Claims 7-13 are rejected under 35 U.S.C. 102(e) as being anticipated by Kitahara et al. (U.S. Patent 6,962,045).

Re claims 7 and 12, as shown in Figures 1-2, Kitahara et al. disclose a motorization system and a method for control of said motorization system including a diesel engine (1), an air-intake circuit (2), and an exhaust circuit (10) for exhaust gas originating from the engine, the intake circuit including an adjusting mechanism (5) for controlling flow of air entering the engine and the exhaust circuit including a nitrogen oxides trap (13) for storage of nitrogen oxides (NO_x) contained in the exhaust gases, the method performing a regeneration mode (SO_x regeneration when step S504 and step S6 have Yes answer, Figure 4) to regenerate the nitrogen oxides trap by supplying reducing exhaust gases, the method comprising:

- determining (step S203) an index value of air flow corresponding to an operating point of the engine during the regeneration mode (see lines 28-35 of column 6);

- instructing the adjusting mechanism (5) to obtain an air flow close to the index value (see lines 28-35 of column 6);

- measuring a variable back-pressure in the exhaust circuit (with pressure sensor (24));

- performing a primary (main injection) and secondary injection (post-injection in step S205) of fuel, the secondary injection being performed during an expansion phase and operative to maintain the exhaust gases in a reducing state; and

- maintaining a constant fuel flow amount of primary injection, increasing a fuel flow amount of the secondary injection, and increasing the air flow according to an increase in the variable back-pressure such that the diesel engine delivers a constant torque during a transition to the regeneration mode (during SO_x regeneration of the NO_x trap (13), if a particle filter (14) is

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deemed saturated (step S501 has Yes answer), a controller switches the engine operation to an operation in Figure 3 to regenerate the particle filter; wherein an engine air-fuel ratio is controlled to be lean (step S103), an air flow is controlled based on Figure 15 to prevent damage to the filter during its regeneration (see lines 24-36 of column 5), and a secondary injection is increased (in step S105) to bring the filter to a regeneration temperature range (T21 and T22); since the regeneration of the filter results in a decrease in back-pressure, the engine torque is maintained relatively constant).

Re claim 8, in the method of Kitahara et al., the motorization system is provided with an accessory (14) that generates a variable back-pressure in the exhaust circuit, and the air-flow index value is incremented together with the exhaust back-pressure (see Figure 15 – air flow is increased as an engine speed becomes higher because of an increase in exhaust back-pressure).

Re claims 9-11, in the method of Kitahara et al., the accessory that generates the variable back-pressure is a particle filter (14), the air-flow index value being corrected by a factor that is a function of the operating point (Q , N_e) and of a degree of loading of the particle filter (the filter is regenerated when a degree of loading of the filter is high (step S501 has Yes answer)), wherein the degree of loading of the particle filter is evaluated by an exhaust-gas flow passing through it and by a pressure difference between an inlet an outlet of the particle filter (see step S12 in Figure 2, Figure 13, and lines 42-57 of column 4), and wherein the degree of loading of the particle filter is evaluated by measuring pressure upstream (using pressure sensor (24)) from the particle filter relative to an exhaust-gas flow.

Re claim 13, in the method of Kitahara et al., as depicted in Figure 3, during the primary injection, a quantity of fuel injected into the engine is reduced when the air flow increases

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(during normal lean condition), and during the secondary injection, the quantity of fuel is increased so as to maintain a richness of the exhaust gas higher than 1 (during regeneration rich condition), and to maintain the constant torque.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office Action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kitahara et al. as applied to claims 13 and 9, respectively, above, in view of Odendall (U.S. Patent 6,823,666).

Re claim 14, the method of Kitahara et al. discloses the invention as cited above, however, fails to disclose a step of measuring a richness of the exhaust gas with a sensor positioned upstream of the nitrogen oxides trap.

As shown in Figure 1, Odendall discloses an exhaust gas apparatus for purifying an exhaust gas of a diesel internal combustion engine (1), comprising a NOx trap (6) and a particle filter (12) located in an exhaust gas circuit (2). As indicated on lines 47-65 of column 4, Odendall teaches that it is conventional in the art to utilize a lambda sensor (8) positioned upstream of the NOx trap to measure a richness of the exhaust gas in order to precisely determine an energy input into the NOx trap. It would have been obvious to one having ordinary skill in the art at the time of the invention was made, to have utilized the sensor taught by

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Odendall in the method of Kitahara et al., since the use thereof would have been routinely practiced by those with ordinary skill in the art to effectively control a regeneration step of the NOx trap.

Re claim 15, the method of Kitahara et al. discloses the invention as cited above, however, fails to disclose a step of measuring a richness of the exhaust gas with a sensor positioned upstream of the particle filter.

As shown in Figure 1, Odendall discloses an exhaust gas apparatus for purifying an exhaust gas of a diesel internal combustion engine (1), comprising a NOx trap (6) and a particle filter (12) located in an exhaust gas circuit (2). As depicted in Figure 3 and indicated on lines 40-61 of column 5, Odendall teaches that it is conventional in the art to utilize a lambda sensor (8) positioned upstream of the particle filter to measure a richness of the exhaust gas in order to precisely control a regeneration step of the particle filter. It would have been obvious to one having ordinary skill in the art at the time of the invention was made, to have utilized the sensor taught by Odendall in the method of Kitahara et al., since the use thereof would have been routinely practiced by those with ordinary skill in the art to effectively control a regeneration step of the particle filter.

Response to Arguments

7. Applicant's arguments with respect to the references applied in the previous Office Action have been fully considered but they are moot in view of the new ground(s) of rejection.

Communication

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Tu Nguyen whose telephone number is (571) 272-4862.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Thomas E. Denion, can be reached on (571) 272-4859. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TMN

December 21, 2009

/Tu M. Nguyen/

Tu M. Nguyen

Primary Examiner

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